

## About Anvil (Sumithrin) & Health

### What is Anvil?

Anvil is a pesticide product that is used to control mosquitoes in outdoor residential and recreational areas. It contains sumithrin and piperonyl butoxide as active ingredients. *Sumithrin* is a man-made pyrethroid insecticide that is also found in other pesticide products used indoors and on pets to control ticks and insects such as fleas and ants. *Piperonyl butoxide* does not directly kill insects on its own, but acts to increase the ability of sumithrin to kill insects. These active ingredients are dissolved in a petroleum solvent.

*Because pesticide products are inherently toxic, no exposure is risk free.* The likelihood of experiencing adverse health effects from exposure to any pesticide, including Anvil, depends primarily on the amount of pesticide that a person is exposed to, and the amount of time the person is exposed. A person's age, sex, genetic makeup, lifestyle and general health can affect the likelihood of experiencing health effects as a result of exposure to pesticides.

### Is spraying of Anvil harmful to a person's health?

*Anvil is applied at very low concentrations to control mosquitoes.* It is unlikely that most people will be affected by this use, but some may experience health effects. For these reasons, individuals should consider taking steps to minimize their exposure.

Short-term exposures to very high levels of pyrethroid pesticides similar to sumithrin can affect the nervous system, causing effects such as loss of coordination, tremors or tingling and numbness in areas of skin contact. Short-term exposure to high levels of petroleum solvents can cause irritation of the eye, skin, nose, throat or lung. Vomiting or central nervous system depression may occur if very high levels of petroleum solvents are ingested. There are no studies examining whether the use of Anvil to control mosquitoes has caused any long-term health effects in humans.

### Is Anvil an "endocrine disruptor"?

Endocrine disruptors are chemicals that interfere with endocrine system function. The endocrine system consists of glands that produce hormones that act together to guide development, growth, reproduction and behavior, and to maintain normal organ function.

Knowledge about the relationship between exposure and endocrine system effects is still developing. Some chemicals that act like the hormone estrogen (for example, DES) have been reported to cause long-term effects in mice born to mothers who ingested low levels during pregnancy. This area of research is the subject of intense scientific inquiry.

When added to cells growing in plastic dishes in a laboratory, high concentrations of sumithrin acted like an estrogen (a class of naturally occurring hormones). This suggests that sumithrin may interfere with endocrine system function in animals. However, sumithrin did not mimic estradiol (a natural estrogen) in three different tests in another study. Although changes in thyroid hormone levels occurred in animals repeatedly exposed to some other pyrethroids, there are no specific studies examining whether or not sumithrin or the other components of Anvil interfere with endocrine system function in animals.

### **Are some people more likely than others to experience symptoms after they have been in contact with Anvil spray?**

*Most people would not be expected to experience any symptoms when Anvil is sprayed for mosquito control.* However, there could be some individuals who may be particularly sensitive to one or more constituents of Anvil, and could possibly experience short-term effects, such as eye, skin, nose or throat irritation or breathing problems. Children in particular may be at greater risk of experiencing adverse effects from the application of Anvil since they may have the potential for greater exposure than adults.

### **If I'm pregnant, can the spraying affect this pregnancy or harm my baby?**

*As with chemical exposures in general, pregnant women should take care to avoid exposures when practical, as the fetus may be vulnerable.* Sumithrin and piperonyl butoxide are unlikely to affect pregnancy outcomes in people as a result of spraying. Although some effects occurred in laboratory animals given large amounts of either sumithrin or piperonyl butoxide during pregnancy, these amounts far exceeded the amounts that individuals are likely to contact from the spraying of Anvil.

### **Should I be concerned about cancer because of the spraying program?**

Sumithrin did not cause cancer in rats or mice when they were fed high levels for their lifetime. Experimental studies have reported that piperonyl butoxide causes liver tumors in rats and mice when they are fed high levels of piperonyl butoxide every day for a long period of time. *The amount of piperonyl butoxide ingested by animals in these studies, however, far exceeds the amount humans might be exposed to as a result of the use of Anvil to control mosquitoes.* Available information indicates that piperonyl butoxide is unlikely to cause cancer in humans as a result of its use to control mosquitoes.

### **Should I be concerned about coming into contact with pesticides on surfaces after spraying (e.g. outdoor furniture, toys, soil and, grass)?**

Some pesticide residues may be present on outdoor surfaces after spraying. Limited studies on other chemicals suggest the amount of pesticide transferred to skin decreases with more time after spraying (and very little transfers 24 hours after spraying), is less on dry skin compared to wet skin, and is less from porous surfaces compared to non-porous ones

Pesticides are degraded from surfaces more rapidly when exposed to sunlight and water. Although not necessary under most circumstances, if spraying has just occurred and surface contact is high (e.g. playing field sports), then exposure can be minimized by wearing long pants and sleeves and washing exposed skin. Normally, most people would not be expected to experience any symptoms from contact with outdoor surfaces after spraying.

Remove children's toys, outdoor equipment and clothes from outside areas. If toys are left outside, wash them with soap and water before using again.

### **Can pets go outside during the spraying?**

If possible, keep your pets inside during the spraying and for about 30 minutes afterwards to help minimize exposure. The amount of pesticide that a pet is likely to track into the house will depend on many of the same factors that were discussed in the previous question.

### **What can I do to reduce exposure to Anvil?**

#### **Actions you should take:**

- Stay inside or avoid the area when spraying takes place and for about 30 minutes after spraying. That time period will greatly reduce the likelihood of your breathing pesticide in air.
- Close windows and doors and turn off window air-conditioning units or close their vents to circulate indoor air before spraying begins. Windows and air-conditioner vents can be reopened about 30 minutes after spraying.
- If you come in direct contact with Anvil spray, protect your eyes. If you get Anvil spray in your eyes, immediately rinse with water. Wash exposed skin. Wash clothes that come in direct contact with spray separately from other laundry.
- Consult your health care provider if you think you are experiencing health effects from spraying.

#### **Actions you may want to take:**

- If spraying just occurred, minimize your contact with surfaces and wash skin that has come in contact with these surfaces.
- Pick homegrown fruits and vegetables you expect to eat soon before spraying takes place. Rinse homegrown fruits and vegetables (in fact, all produce) thoroughly with water before cooking or eating.
- Cover outdoor tables and play equipment before spraying or wash them off with detergent and water after they have been sprayed.
- Bring laundry and small toys inside before spraying begins. (Wash with detergent and water if exposed to Anvil during spraying.)
- Bring pet food/water dishes inside, and cover fishponds to avoid direct exposure.

*This information has been adapted from the New York Department of Health, the New York City Department of Health and Mental Hygiene, and the Massachusetts Department of Environmental Protection.*

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